

FACT SHEET

Improving Quality in Child and Adolescent Health—Research and Tools

Agency for Healthcare Research and Quality



AHRQ is the lead Federal agency charged with supporting and conducting research that will improve the quality, safety, efficiency, and effectiveness of health care for all Americans.

Introduction

The Agency for Healthcare Research and Quality sponsors research that is focused on improving health care quality, reducing the costs of health care, ensuring patient safety, and broadening access to health care services for all Americans, including children and adolescents. This fact sheet provides examples of ongoing projects and recent findings from AHRQ's portfolio of research focusing on improving the quality of health care for children and adolescents.[†]

AHRQ's quality of care research aims to:

- Determine what works in quality improvement (QI) efforts.
- Develop measures for accountability and improvement.
- Identify important quality problems in children's health care.
- Identify factors in the health care system that determine quality.

This fact sheet also highlights QI tools that stem from AHRQ-supported research. The goal is for these tools to be useful to health care providers, health systems, and children and their families.



U.S. Department of Health
and Human Services
Public Health Service

Research in Progress

Quality Improvement

- *Improvements are being sought in safety practices for pediatric patients.*

The goals of this project are to develop and expand a medication error reduction program, identify and collaborate on best practices in pediatric pain management, and implement a pediatric patient-safety best-practices program. Paul Sharek, Principal Investigator (AHRQ grant HS13698).

- *Researchers will test a parent-initiated prevention program.*

This randomized controlled trial is testing a computer-driven, patient-centered expert system to improve the receipt of evidence-based preventive services by pediatric patients. The study will assess the effectiveness of a real-time parent-initiated prevention program in changing physicians' delivery of preventive care and parental preventive behaviors. Dimitri A. Christakis, Principal Investigator (AHRQ grant HS13302).

- *Quality of care for newborns with jaundice will be assessed.*

The impact of a QI intervention on adherence to the American Academy of Pediatrics' guidelines for jaundice management is being assessed. R. Heather Palmer, Principal Investigator (AHRQ grant HS09782).

[†]Project includes children or children's health care issues, but does not focus exclusively on children.



- *Study aims to eliminate barriers to implementing adolescent preventive health guidelines.*

This study addresses provider and system-level barriers to delivery of preventive services to adolescents during primary care visits. The goal is to determine whether a systems intervention in a managed health care organization—including provider training and customized screening and charting tools—increases the rates of provider delivery of clinical preventive services to adolescents. Charles E. Irwin, Principal Investigator (AHRQ grant HS11095).

- *Internet learning modules may improve chlamydia screening for adolescents.*

Study physicians will complete a year-long series of Internet learning modules that integrate case-based education with audit, feedback, and benchmarking of practice profiles. The goal is to improve chlamydia screening and treatment rates among patients aged 16 to 26, which should result in lower rates of pelvic inflammatory disease. Jeroan Allison, Principal Investigator (AHRQ grant HS11124).

- *Study compares two pediatric asthma management programs.*

Researchers are comparing a modified “easy breathing” program with a disease management program being used by 66 providers in 18 communities. Outcome measures will include adherence to guidelines, antiinflammatory prescription and use rates, hospitalization and ER visits, patient/family satisfaction, and quality of life. Michele M. Cloutier, Principal Investigator (AHRQ grant HS11147).

- *A multisite intervention project for children with asthma should lead to improved outcomes and reduced costs.*

Using a family-focused QI intervention for children with asthma, this study is targeting providers of care to poor, inner-city, minority youths aged 5-18 who are

enrolled in a community health center-based Medicaid managed care organization. The goals are to deliver patient-linked guideline prompts at the point of care using affordable information technology and evaluate the system's effects on the process and outcomes of pediatric asthma care. Judith Fifield, Principal Investigator (AHRQ grant HS11068).

- *Study findings will build an asthma case-management model for Head Start.*

Researchers are developing a pediatric asthma management model for Head Start personnel using evidence-based asthma management criteria. The goal is to improve the asthma management practices of children, parents, and staff, as well as reduce school absences and use of acute care services. Perla A. Vargas, Principal Investigator (AHRQ grant HS11062).

- *Study focuses on using evidence to enhance care for childhood illnesses.*

Investigators are examining whether providing evidence at the point of ambulatory pediatric care will improve antibiotic use in pediatric disorders, reduce duration of therapy for acute sinusitis, reduce use of bronchodilators, and increase the use of intranasal steroids for allergic rhinitis. Robert L. Davis, Principal Investigator (AHRQ grant HS10516).

- *Standardizing surfactant therapy for preterm infants will improve outcomes.*

One of the goals of this QI study is to reduce morbidity and mortality among preterm infants by standardizing use of surfactant therapy for preventing and treating neonatal respiratory distress syndrome. Jeffrey D. Horbar, Principal Investigator (AHRQ grant HS10528).

- † *Study aims to improve ambulatory antibiotic prescribing practices.*

Data from the Minimizing Antibiotic Resistance in Colorado (MARC) study are being used to examine the processes and outcomes of care of two intervention strategies. The program will measure and assess changes in antibiotic prescription rates for pharyngitis in children and bronchitis in adults, using managed care organization and Medicaid data from physician practices. Ralph Gonzales, Principal Investigator (AHRQ Grant HS13001).

- *Impact of electronic prescribing on medication errors in ambulatory pediatrics is being examined.*

The goals of this research are to assess the baseline medication error rate in an urban pediatric emergency department (ED) and clinic; compare handheld implements for electronic prescription writing; and determine the effect that electronic prescribing has on medication error rates and prescribing practices. Kevin Johnson, Principal Investigator (AHRQ grant HS11868).

- † *Project will build on previous studies to improve medication safety across clinical settings.*

This project is extending previous studies to new populations and settings to improve drug safety across the continuum of care in diverse patient groups. One study will determine the rates, types and predictors of medication errors and adverse drug events in a pediatric ambulatory setting. Another study involves a randomized controlled trial to assess the effectiveness of an intervention to reduce serious medication errors in children. David W. Bates, Principal Investigator (AHRQ grant HS11534).

- *Researchers are evaluating use of hand-held technology to reduce errors in attention-deficit/hyperactivity disorder (ADHD) care.*

This randomized controlled trial in three primary care practices will

develop and evaluate a computerized system for laptop use in the examining room as an extension of an existing in-house prescribing system to improve the care of children with ADHD. Paula Lozano, Principal Investigator (AHRQ grant HS11859).

- *Four Developmental Centers for Evaluation and Research in Patient Safety will address quality and patient safety for neonates and children.*

Researchers are establishing a Developmental Center for Evaluation and Research in Patient Safety (DCERPS) to develop programs to reduce and prevent medical errors in children in diverse settings (e.g., inpatient and intensive care units, EDs, private pediatric practices in rural and urban areas, and primary care centers serving minority populations). James A. Taylor, Principal Investigator (AHRQ grant HS11590). A second DCERPS is being established to reduce medical errors and enhance patient safety for high-risk newborns. Jeffrey D. Horbar, Principal Investigator (AHRQ grant HS11583). †A third DCERPS will build a multi-institutional and interdisciplinary research program focusing on patient safety activities, including four pediatric programs that will review data on adverse outcomes in pediatric patients. David H. Hickam, Principal Investigator (AHRQ grant HS11550). †For the fourth DCERPS, the American Academy of Family Physicians will create a national center in primary care to strengthen medical education programs. These programs are designed to improve the safety of medical care for patients of all ages, including children seen in office-based primary care and residency training clinics. John M. Hickner, Principal Investigator (AHRQ grant HS11584).

- † *Researchers examine the use of surveillance, analysis, and interventions to improve patient safety.*

The goals of this project are to study the best methods to identify and improve reporting of medical errors and adverse events; the epidemiology of medical errors including the organizational, process, and human factors that contribute to the occurrence of medical errors; the effectiveness of educational and process interventions to reduce medical errors and improve patient safety; and how health care workers communicate with patients and families about medical errors. The researchers will use risk management and incident report data on children from the St. Louis Children's Hospital to document and catalog medical errors and patient safety issues in children. Victoria Fraser, Principal Investigator (AHRQ grant HS11898).

- † *Investigators address preventable medical errors in Mississippi.*

The goals of this project are to identify the causes of preventable health care errors and patient injury in health care delivery and develop, demonstrate, evaluate, and widely disseminate strategies for reducing errors and improving patient safety. Researchers will focus on 10 study sites throughout the State and priority populations, including urban and rural residents, low-income and minority groups, women, children, and the elderly. Andrew C. Brown, Principal Investigator (AHRQ grant HS11923).

- *Study focuses on the transfer of a novel simulation program for the delivery room.*

The goal is to determine whether the skills acquired in a simulated environment can be applied in a real delivery room, and whether using these skills results in improved patient safety for mothers and babies. Louis P. Halamek, Principal Investigator (AHRQ grant HS12022).

- † *Researchers explore applied strategies for more patient safety interventions.*

The setting of this study involves two practice-based research networks: the Colorado Research Network (includes a pediatric practice) and the High Plains Research Network. Both provide services to rural, urban, minority, frontier, and underserved populations. Researchers will analyze the causes and effects of errors in primary care, as well as develop and implement interventions aimed at decreasing errors. Wilson D. Pace, Principal Investigator (AHRQ grant HS11878).

Quality Measurement

- *Researchers are measuring the quality of neonatal care.*

Researchers are examining the validity of volume as an indirect quality indicator for neonatal intensive care by evaluating the association between volume and multiple outcomes for very low birthweight infants, including measures of respiratory, infectious, neurological, gastrointestinal and ophthalmological diseases. Jeannette Rogowski, Principal Investigator (AHRQ grant HS13371).

- *A new measure for assessing quality of asthma care is being tested.*

This study will test the feasibility and validity of a new measure of quality of asthma care for poor inner-city children with asthma. The project will also test the Asthma Visit Questionnaire to assess the quality of asthma care in primary care settings. Yvonne Senturia, Principal Investigator (AHRQ grant HS13081).

- *Findings from three projects will strengthen pediatric health plan assessments.*

This initiative involves development of the pediatric version of the CAHPS® instrument for assessing care at the group practice level and production of refined and tested instruments that will be suitable for a

large-scale field test. Paul Cleary, Principal Investigator (AHRQ grant HS09205); Ron Hays, Principal Investigator (AHRQ grant HS09204); and Steven Garfinkel, Principal Investigator (AHRQ grant HS13193).

- *Quality-of-care measurements for high-risk infants are being developed.*

This project has three objectives: (1) develop new methods for measuring quality of care for very low birthweight infants, (2) apply the methods to estimating past and future quality of care, and (3) apply measures that summarize quality differences and economic performance across time and place. Jeanette A. Rogowski, Principal Investigator (AHRQ grant HS10328).

- *Investigators are developing and validating quality measures for insertion of tympanostomy tubes.*

Researchers are developing quality measures and evidence-based criteria to identify appropriate candidates for tympanostomy tube placement in children with recurring otitis media with effusion. They also will examine the relationship between various patient, parent, and physician attributes and the appropriateness of tube placement. Mark R. Chassin, Principal Investigator (AHRQ grant HS10302).

- *Mortality data will be used to develop quality indicators.*

This 5-year project will examine the epidemiological transition in pediatric mortality from mostly accidental and sudden death to deaths due to complex chronic conditions. The goals are to develop techniques to monitor health care use for indicators of quality of care for dying children and develop and test a longitudinal needs assessment program for children with complex chronic conditions. John Feudtner, Principal Investigator (AHRQ grant HS00002).

- † *Researchers are validating the Healthcare Cost and Utilization Project (HCUP) Patient Safety Quality Indicators.*

The objective is to validate HCUP quality indicators to include patient safety indicators using data from three integrated delivery systems (Intermountain Health Care, Providence Health System, and UPMC Health System) to accurately measure adverse events. Some of the HCUP quality indicators being validated will focus on the care of children. Shula Bernard, Principal Investigator (AHRQ contract 290-00-0018).

- *Quality of care for homeless adolescents is being measured.*

This project will use interviews, focus groups, and a pilot test to document the factors necessary for monitoring access and quality of primary health care for homeless youths. B. Josephine Ensign, Principal Investigator (AHRQ grant HS11414).

Quality Determinants

- *Study will assess how physician networks affect the care of children with chronic conditions.*

This study will examine whether out-of-network benefits and cost-sharing of managed health plans are associated with the likelihood of seeing an in-network versus out-of-network physician, and whether health care quality and expenditures are similar or different for children seeing in- versus out-of-network physicians. David Grembowski, Principal Investigator (AHRQ grant HS13147).

- *Study will assess quality of care for low-income adolescents.*

Researchers are assessing the effects of the organizational features of KidCare, Florida's State Children's Health Insurance Program (SCHIP), on access to and quality of primary and preventive care for enrolled adolescents, ages 12 to 19. In addition, investigators will examine

the impact of differences in provider practice settings and the impact of clinician characteristics. This study is part of the Child Health Insurance Research Initiative (CHIRI™). Elizabeth A. Shenkman, Principal Investigator (AHRQ grant HS10465)

- *Researchers are assessing health care delivery for children with special needs.*

This CHIRI™ project investigates the effects of providing services in a managed care versus fee-for-service setting to children with dual enrollment in Medicaid and the Children with Special Health Care Needs (CSHCN) program. Cost, use of services, coordination of care, provider perspectives, and parent's perceived access and satisfaction with the two delivery systems will be examined. G. Elaine Beane, Principal Investigator (AHRQ grant HS10441). A second study is analyzing factors that influence selection of a Medicaid managed care plan by the parents of CSHCN, examining barriers to care for CSHCN, and assessing several quality of care indicators such as receipt of preventive services, referrals to specialists, appropriateness of medication use, hospitalizations for ambulatory sensitive conditions, and continuity of care. Jean Mitchell, Principal Investigator (AHRQ grant HS10912).

- *Study examines how to improve quality of care for publicly insured children.*

Researchers are assessing the impact of health care features on access, use, and quality of care for enrollees in Child Health Plus, New York's SCHIP. Sub-studies of children with asthma and minority children also are being conducted. This is a CHIRI™ project. Peter G. Szilagyi, Principal Investigator (AHRQ grant HS10450).

- *What determines the quality of children's health care?*

This project will focus on the mechanisms by which managed care organizations influence children's access to medical care, their use of specialty care, and their expenditures for health care. The impact of alternative models of primary-specialty care collaboration on quality, costs, and outcomes for children with chronic and mental health disorders also will be examined. Christopher Forrest, Principal Investigator (AHRQ grant HS00003).

- *Study is assessing how managed care policies affect the quality of pediatric asthma care.*

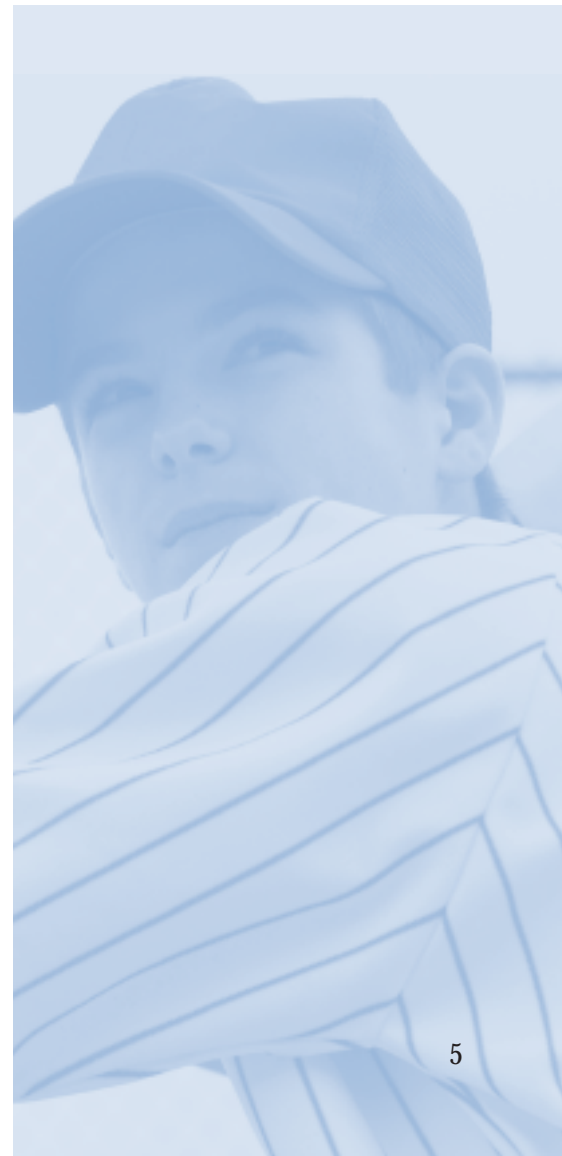
Investigators are determining the impact of the transition from fee-for-service to managed care on quality of care, quality of life, and health outcomes for poor children with asthma and assessing the impact of organizational policies on quality and outcomes. Bruce Stuart, Principal Investigator (AHRQ grant HS09950).

- *Managed care practices that affect children with chronic illnesses are being examined.*

Researchers are examining the structural characteristics, incentives, and quality-assurance efforts of managed care organizations in Washington State. They will determine how these factors affect the quality of care for children with chronic conditions such as asthma, diabetes, and cerebral palsy. Frederick Connell, Principal Investigator (AHRQ grant HS09948).

- *Study of neonatal intensive care addresses regionalization, market forces, and mortality.*

Researchers are assessing differences in neonatal mortality over time, focusing on assessing the volume of newborns in high-risk groups, comparing insurance coverage with mortality, and assessing how competition affects the diffusion of neonatal intensive care units





(NICUs) into community hospitals. Ciaran S. Phibbs, Principal Investigator (NIH/AHRQ grant HD36914).

- *Effects of teamwork on errors in NICUs are being examined.*

Researchers are testing the hypothesis that specific behaviors in teamwork correlate with errors in delivering care to preterm infants during initial resuscitation and in the first 90 minutes of care. Eric J. Thomas, Principal Investigator (AHRQ grant HS11164).

- *New center will focus on diversity and therapeutics for the pediatric population.*

Improvement in child health is the focus of this Center for Education and Research on Therapeutics (CERT). Activities may include innovative education and research on new drugs and devices used in pediatric care and new uses of existing drugs and devices. Potential study topics include therapeutic drug monitoring in children infected with HIV, drug metabolism, vitamin D-deficient rickets, asthma care, attention deficit/hyperactivity disorder, and adverse drug reactions. William Campbell, Principal Investigator (AHRQ grant HS10397).

Making the Case for Investments in Quality

- *Collaborators will use multilevel approach to improve children's health care quality.*

This project will bring together pediatric organizations to support large-scale activities that have been shown to be effective in improving care for children. These partners will engage State American Academy of Pediatrics chapters in evidence-based collaborative learning sessions as well as an interactive Web-based QI tool with the goal of supporting practice changes leading to improved care for children with attention-deficit/hyperactivity disorder. Carole Lannon, Principal Investigator (AHRQ grant HS13721).

- *Researchers are assessing the economic impact of breastfeeding promotions.*

Using a randomized controlled trial, researchers are comparing the effects of pre- and postnatal breastfeeding promotions on child health care costs, breastfeeding practices, and outcomes. Karen A. Bonuck, Principal Investigator (AHRQ grant HS10900).

- *Study focuses on the effects of medication errors in the pediatric intensive care unit (PICU).*

The aims of this project are to (1) calculate the increase in resource use attributable to exposure to medication errors in patients admitted to the PICU, (2) determine the risk of mortality attributable to exposure to medication errors in PICU patients, and (3) determine the risk of requiring inpatient rehabilitation or technology dependence associated with exposure to medication errors. Joel D. Portnoy, Principal Investigator (AHRQ grant HS11636).

Addressing Racial and Ethnic Disparities

- *Investigators are assessing the impact of health maintenance organizations (HMOs) on disparities.*

These researchers are assessing the scope and magnitude of racial/ethnic and socioeconomic disparities in HMOs and developing age, sex, and case-mix adjusted use and quality measures. The measures will be used to examine racial/ethnic disparities in preventive care, satisfaction, change in health status, use of expensive hospital-based procedures, and avoidable hospital complications and mortality. Kevin Fiscella, Principal Investigator (AHRQ grant HS10910).

- *Investigators are studying medical errors in racial/ethnic communities.*

The goals of this project are to create a Center for Improving

Patient Safety; study medical error awareness and experiences within racial and ethnic minority populations; and focus on various settings, levels of care, and medical specialties. One pilot study will use aggregated risk management incident reports to detect, prevent, and treat common causes of medical errors and near misses in selected medical care settings (including general pediatrics, cardiology, emergency medicine, and radiology). Robert S. Dittus, Principal Investigator (AHRQ grant HS11563).

- *Two studies focus on racial/ethnic variations in managing prematurity and infant mortality.*

In the first study, the researchers are using vital statistics to determine the relationship between newborn ethnicity, obstetric volume, and NICU volume in the hospital of birth. Mark Chassin, Principal Investigator (AHRQ grant HS10859). Researchers in the second study are using linked birth records, death records, and hospital discharge abstract data to examine racial/ethnic differences in infant mortality. Martin Shapiro, Principal Investigator (AHRQ grant HS10858).

- *Project focuses on improving quality of care for Latino children.*

This researcher is analyzing access and quality of care barriers for poor children with asthma; improving survey methods for evaluating morbidity and risk factors for asthma, with particular attention to the effects of bilingualism (English/Spanish); and examining differences in morbidity among Latino children with asthma. The long-term goal is to improve health outcomes and quality of life for Latino children with asthma. Marielana Lara, Principal Investigator (AHRQ grant K08 HS00008).

Recent Findings

Quality Improvement

- *School-based health centers enhance care for children with asthma.*

Researchers evaluated whether the availability of school-based health center (SBHC) services measurably affected the health and school performance of 949 inner-city children with asthma. The rate of hospitalization was higher among children attending non-SBHC schools (17 vs. 11 percent), as was the number of school days missed (21 vs. 18 days). SBHCs may offer a practical response to the limited access that poor and uninsured children have to health care. Webber, Carpiniello, and Oruwariye, et al., *Arch Pediatr Adolesc Med* 157:125-129, 2003 (AHRQ grant HS10136).

- *Parents of hospitalized children often change smoking behaviors.*

The Stop Tobacco Outreach Program was offered to 71 parents who smoked and whose children were hospitalized for asthma, pneumonia, or other respiratory illness. Those who completed the counseling sessions, had a stop-smoking attempt that lasted at least 24 hours, and had not smoked a cigarette in the last 7 days were 80, 49, and 21 percent, respectively. Also, 71 percent of the parents prohibited smoking in the home after the program, compared with 29 percent at enrollment. Winickoff, Hillis, Palfrey, et al., *Pediatrics* 111(1):140-145, 2003 (NRSA training grant T32 HS00063).

- *Team-based approach may improve detection of chlamydia.*

A team-based approach to improving chlamydia screening was instituted at an HMO. The strategy involved organizing teams of medical and administrative staff, getting leadership buy-in, educating participants about chlamydia, holding monthly meetings to discuss problem-solving strategies, using urine-based testing instead of

pelvic exams, and monitoring progress with clinic-specific screening rates. The approach increased the screening rate of sexually active 14- to 18-year-old females from 5 to 65 percent. Shafer, Tebb, Pantell, et al., *JAMA* 288(22):2846-2852, 2002 (AHRQ grant HS10537).

- *Poor children's dental health can improve with minimal cost.*

Researchers conducted a cost-effectiveness analysis of a successful school-based dental sealant program for low-socioeconomic-status children in New York. The data revealed that the program could substantially improve the dental health of poor school-aged children at no cost or only slightly increased cost relative to ordinary dental care. Zalos, Glied, Tobin, et al., *J Health Care Poor Underserved* 13(1):38-48, 2002 (AHRQ and HRSA, cooperative agreement).

- *Training helps ED nurses recognize children at risk of suicide.*

Emergency department (ED) nurses attended educational sessions on psychiatric issues, including the Risk of Suicide Clinical Practice Guideline (CPG) and the Risk of Suicide Questionnaire. After the training, participants displayed a marked increase in knowledge about the CPG and care of ED mental health patients, and they were better equipped to manage potentially suicidal children in the ED. Horowitz, Smith, Levin, et al., *Pediatr Emerg Care* 17(4):306-309, 2001 (NRSA training grant T32 HS00063).

- *An inner-city asthma intervention proves effective.*

Following a baseline assessment of about 1,000 inner-city children with physician-diagnosed asthma, researchers randomly assigned them to an asthma counselor (AC) or usual care (UC) group and followed clinical outcomes and use of services for 2 years. The AC group had an average of 27 more symptom-free days, and

the AC program improved outcomes at an average additional cost of \$9.20 per symptom-free day gained. Sullivan, Weiss, Lynn, et al., *J Allergy Clin Immunol* 110:576-581, 2002 (AHRQ Publication No. 03-R006)* (Intramural).

- *Infants discharged 1 or 2 days after birth fare equally well.*

Investigators studied discharge, readmission, and ER visit data on more than 20,000 pairs of mothers and newborn infants covered by a large Massachusetts HMO. Results showed that ER visits and readmission rates following discharge did not change after the State established a 48-hour minimum stay. Madden, Soumerai, Lieu, et al., *N Engl J Med* 347(25):2031-2038, 2002 (AHRQ grant HS10060).

- *Study tests the efficacy of asthma management guidelines.*

This study involved a prospective cohort design of all children aged 1 to 18 seen in the Connecticut Children's Medical Center ER for an asthma exacerbation. Researchers examined the impact of using the National Heart, Lung and Blood Institute's clinical practice guidelines on the quality of asthma care.

Effectiveness of the NHLBI Guideline on Childhood Asthma Outcomes (NTIS Accession No. PB2002-104710),** Philip V. Scribano, Principal Investigator (AHRQ grant HS09825).

- *Researchers examine the literature on QI.*

Researchers interviewed experts and reviewed the published literature (1985-1997) on QI activities in child health. Barriers to pediatric QI were similar to those for adult populations and were complicated by limited resources and difficulties in measuring health outcomes, among other factors. However, research has shown that some QI strategies are effective. Ferris, Dougherty, Blumenthal, et al., *Pediatrics* 107:143-155, 2001 (AHRQ

Publication No. 01-R020)* (Intramural).

- *Embedding guidelines in a computer charting system does not improve quality of care.*

Researchers examined the impact of clinical guidelines for managing the care of 830 children aged 3 or younger with high fevers. There were no changes in appropriateness of care or hospital charges for children managed with or without guidelines. Schriger, Baraff, Buller, et al., *J Am Med Assoc* 284(2):186-195, 2000 (AHRQ grant HS06284).

- *Feedback and financial incentives do not improve pediatric preventive care.*

According to this study, providing pediatricians in Medicaid managed care organizations with feedback on compliance with recommendations for preventive health services and financial bonuses did not increase their provision of these services. Hillman, Ripley, Goldfarb, et al., *Pediatrics* 104(5):931-935, 1999 (AHRQ grant HS07634).

Quality Measurement

- *Parents provide views of inpatient care quality.*

Responding to the Pediatric Inpatient Survey, 6,030 parents of children treated at one of 38 hospitals rated their child's care as very good. Parents reported problems with 27 percent of the survey's hospital process measures. They had the most problems with poor information to the child and coordination of care. Co, Ferris, Marino, et al., *Pediatrics* 111(2):308-314, 2003 (NRSA training grant T32 HS00063).

- *Cannister counts yield more accurate profiles of medication underuse.*

This study compared two methods for counting the use of bronchodilators and antiinflammatory medication among adult and pediatric asthma patients. The canister-equivalent method for

counting dispensed asthma medications resulted in a 40 percent increase in the population identified as having high bronchodilator and chronic antiinflammatory medication use than simple asthma medication counts. Glauber and Fuhlbrigge, *Ann Allergy Asthma Immunol* 88:451-456, 2002 (NRSA training grant T32 HS00063).

- *Do adult and child quality assessments differ?*

Using data from 136 health plans, this study examined how the adult and child versions of CAHPS® differed in ranking health plans. There was fair to moderate agreement between adult and child mean scores in ranking health plans. Also, CAHPS® scores for children were significantly higher than those for adults, except for customer service and specialist ratings. Zahn, Sangl, Meyer, et al., *Med Care* 40(2):145-154, 2002 (AHRQ Publication No. 02-R047)* (Intramural).

- *Health plan quality information for adults is not a proxy for children.*

Researchers used CAHPS® to assess responses from nearly 220,000 adults and more than 55,000 parents of children. The analysis found marked variation between the care provided by specialists and primary care physicians to adults and children within the same plan; however, there was little variation regarding health plan activities (health plan ratings and claims processing). Bost, Thompson, Shih, et al., *Ambulatory Pediatr* 2(3):224-229, 2002 (AHRQ grant HS09205).

- *Researchers assess interpersonal aspects of pediatric care.*

This project involved development of a set of domains that focus on patient interaction with the health care delivery system (such as communication with providers, courtesy of staff, getting needed care, and getting care quickly). A review of the literature also resulted in ways to improve interpersonal interaction

with children and their parents in the ER. Darby, *Ambulatory Pediatr* 2(4):345-348, 2002 (AHRQ Publication No. 02-R088)* (Intramural).

- *Study assesses parents' source and quality of advice.*

Using a self-administered survey of 1,108 subjects, researchers determined sources and quality of medical advice and information used by parents. Half of the respondents reported using the Internet for medical information, 30 percent used it to obtain information about a specific acute or chronic medical illness, and 15 percent had communicated with a physician by e-mail. Respondents also rated physician advice by phone or visit and information obtained via the Internet as very good or excellent (76 and 47 percent, respectively). *Pediatric Internet Medical Advice and Triage* (NTIS Accession No. PB2002-108738),** Larry J. Baraff, Principal Investigator (AHRQ grant HS10604).

- *Adolescents accurately characterize the care they receive.*

To develop quality measures for adolescent care, researchers recruited 400 adolescents, audiotaped their visits with physicians, and conducted phone surveys to assess their recollection of the preventive health care they received. Adolescents' recall of the care they received was good. Klein, Graff, Santelli, et al., *Health Serv Res* 34(1):391-404, 1999 (AHRQ HS08192).

- *Different measures are needed to assess the quality of health care provided to children and adults.*

Because children differ from adults in their health care needs and in the way they use care, researchers should use measures of health care quality that are appropriate to children. Future research should address specific methodologic challenges involved in measuring quality of pediatric health care. Palmer and Miller, *Ambulatory Pediatr* 1(1):39-

52, 2001 (AHRQ Publication No. 01-R037)* (Intramural).

- *Measuring quality for vulnerable children requires a special approach.*

These authors point out that pediatric quality measurement is distinct from that for adults because of factors related to children's development and dependence, differential epidemiology, demographic factors, and differences between the child and adult health service systems. A noncategorical approach, rather than one based on illness status or specific condition, is indicated. Seid, Varni, and Kurtin, *Am J Med Qual* 15(4):182-188, 2000 (AHRQ grant HS10317).

Quality Problem Identification

- *Misconceptions contribute to parental demand for antibiotics.*

Thirty-six day care centers and 398 parents were surveyed about their beliefs and the centers' policies for excluding children, requiring physician clearance, and/or enforcing their policies regarding symptoms of upper respiratory tract infection. Responses revealed that only 4 percent of parents felt pressured by staff to see a doctor or obtain an antibiotic (2 percent). However, 20 percent believed most colds and flu illnesses are caused by bacteria and improve faster with antibiotics. Friedman, Lee, Kleinman, et al., *Arch Pediatr Adolesc Med* 157:369-374, 2003 (NRSA training grant HS00063).

- *Doctors succumb to overt pressure for antibiotic treatment.*

By analyzing audiotaped and videotaped conversations of 295 acute care visits, researchers found that parents pressure pediatricians to prescribe antibiotics for their children. Doctors prescribed antibiotics for nearly half of all cases involving some form of overt pressure (15 out of 31). Stivers, *Soc Sci Med* 54(7):1111-1130, 2002 (AHRQ grant HS10577).





- *Medical errors affect 2 to 3 of every 100 hospitalized children.*

Researchers used HCUP data to calculate hospital-reported medical errors among non-newborn pediatric inpatients up to 18 years of age. Results show the national medical error rate in hospitalized children ranged from 1.81 to 2.96 per 100 discharges. The error rate increased from 1988 to 1991 but remained stable from 1991 to 1997. Slonim, LaFleur, Ahmed, et al., *Pediatrics* 111(3):617-621, 2003 (AHRQ grant HS11022).

- *Many children are using asthma medication inappropriately.*

Parents of 638 children with asthma who were cared for at 1 of 42 primary managed care practices in three U.S. regions were interviewed. Researchers found that 64 percent of the children with persistent asthma were inadequately controlled. Older age, minority race, and household poverty were significantly associated with inadequate control. Lozano, Finkelstein, Hecht, et al., *Arch Pediatr Adolesc Med* 157:81-88, 2003 (AHRQ grant HS08368).

- *Reviewers question reproductive care resource distribution.*

This study finds that the United States has substantially greater NICU resources per capita than Australia, Canada, and the United Kingdom without having better infant survival. The researchers call into question the effectiveness of the current distribution of U.S. reproductive care resources and call for improved funding for preconception and prenatal care. Thompson, Goodman, and Little, *Pediatrics* 109(6):1036-1043, 2002 (NRSA training grant T32 HS00070).

- *New methods for educating parents about asthma are needed.*

This study of 638 children with asthma found that 78 percent had bedroom carpeting. Most lived in households that had furry pets, a smoker, and cockroaches or mice (59, 30, and 18 percent,

respectively). Although 45 percent of the parents had received written instructions about avoiding asthma triggers, receipt of instructions was not associated with efforts to do so. Finkelstein, Fuhlbrigge, Lozano, et al., *Arch Pediatr Adolesc Med* 156:258-264, 2002 (AHRQ grant HS08368).

- *Medicaid-insured children with asthma underuse controller medications.*

Researchers surveyed the parents of 1,648 children and adolescents with asthma. Of the 1,083 children with persistent asthma, 73 percent underused controller therapy, 49 percent reported no controller use, and 24 percent reported less than daily use. Blacks and Hispanics were at substantially increased risk of underuse; however, parental education beyond high school reduced the risk by 40 percent. Finkelstein, Lozano, Farber, et al., *Arch Pediatr Adolesc Med* 156:562-567, 2002 (AHRQ grant HS09935).

- *Extra care by pharmacists does not improve asthma outcomes.*

This study examined asthma outcomes and use of health care services of 153 and 177 children who filled asthma medication prescriptions at 14 intervention or 18 usual care sites, respectively. Although intervention site pharmacists were trained to provide individualized asthma management services, researchers found no differences between sites in pulmonary function, functional status, quality of life, asthma management, satisfaction with care, use of antiinflammatory medications, total asthma-related medical care use, or school days lost. Stergachis, Gardner, Anderson, et al., *J Am Pharm Assoc* 42:743-752, 2002, and *Pharmaceutical Care and Pediatric Asthma Outcomes, Final Report* (NTIS Accession No. PB2000-101828),** Andreas S. Stergachis, Principal Investigator (AHRQ grant HS07834).

- *Erythromycin therapy in newborns increases the risk of gastric outlet obstruction.*

Tennessee Medicaid files from 1985 to 1997 were analyzed to examine the link between erythromycin use and infantile hypertrophic pyloric stenosis (IHPS). Infants who received erythromycin between 3 and 13 days of life were at a substantially increased risk of developing IHPS, which results in gastric outlet obstruction that requires surgery. Cooper, Griffin, Arbogast, et al., *Arch Pediatr Adolesc Med* 156:647-650, 2002 (AHRQ grant HS10384).

- *Experts offer blueprint for improving asthma outcomes.*

A committee of experts and leaders in childhood asthma outlined policy recommendations to improve childhood asthma outcomes. Their recommendations address ways to improve health care delivery and financing, enhance access to and quality of health care services for asthma, increase knowledge about asthma, and ensure asthma-safe schools. Lara, Rosenbaum, Rachelefsky, et al, *Pediatrics* 109(5):919-930, 2002 (AHRQ grant HS00008).

- *Perceptions that parents expect antibiotics are often wrong.*

Researchers surveyed 306 parents prior to an audiotaped visit to two private practices for their child's symptoms of upper respiratory tract infection, asked doctors after the visits what they believed the parents expected, and analyzed communication behaviors used by parents and physicians' perceptions of parental expectations. When parents suggested a candidate diagnosis or resisted a viral diagnosis, it increased by five and nearly three times, respectively, the odds that a doctor would perceive that parents expected antibiotics. However, there was no association between communication behaviors and parents' reports of expectations for antibiotics. Stivers,

Mangione-Smith, Elliott, et al., *J Fam Pract* 52(2):140-148, 2003 (AHRQ grant HS10577).

- *Girls are more likely than boys to die in the hospital following heart surgery.*

Investigators identified 6,593 children who underwent cardiac surgery for congenital heart disease from California hospital discharge data for 1995 to 1997. After controlling for variables affecting mortality, girls had a 51 percent higher odds of death than boys. Chang, Chen, and Klitzner, *Circulation* 106:1514-1522, 2002 (NRSA training grant T32 HS00028).

- *Use of oral steroids is common among children in TennCare.*

In 1998, 7 percent of children enrolled in Tennessee's managed health care program for Medicaid-eligible people (TennCare) had at least one oral corticosteroid prescription filled. The rate of corticosteroid use from birth to 2 years was three to four times that of older children, and only 80 percent of new users had a possible indication for steroid use. Cooper, Staffa, Renfrew, et al., *Ambulatory Pediatr* 2(5):375-381, 2002 (AHRQ grant HS10384).

- *When pediatricians perceive parental pressure to prescribe antibiotics, most do.*

Conversations between parents and pediatricians from 295 audiotaped acute care visits and 65 videotaped well-child and acute care visits were analyzed and used to examine how pediatricians responded to interaction with parents. When parents only discussed their children's symptoms, pediatricians perceived parents wanted a medical evaluation and complied. When parents offered a candidate diagnosis (in 16 percent of cases), 82 percent of the cases were treated with antibiotics. Stivers, *Health Commun* 14(3):299-338, 2002 (AHRQ grant HS10577).

- *Ventilation of low birthweight infants increases the risk of disabling cerebral palsy (DCP).*

Researchers examined a cohort of 1,105 infants with a birthweight of 500 to 2,000 grams and constructed an index of exposure to hypocapnia (low levels of carbon dioxide in the blood). Of the 902 survivors to age 2 years, 657 had neurodevelopmental assessments and blood gas measurements in their first week of life. DCP was diagnosed in 2.3 percent of the 257 unventilated newborns, 9.4 percent of the 320 ventilated newborns without exposure to unusual levels of hypocapnia, and 27.5 percent of the 80 ventilated infants with exposure to significant hypocapnia. Collins, Lorenz, Jetton, et al., *Pediatr Res* 50(6):712-719, 2001 (AHRQ grant HS08385).

- *Universal versus selective initiation of intensive care for premature newborns remains a moral dilemma.*

Researchers examined perinatal management, mortality, prevalence of disabling cerebral palsy, and costs for extremely premature infants born in the mid-1980s in New Jersey and the Netherlands. When intensive care is used for all (U.S. neonatologists' approach) rather than selected extremely premature babies (European approach), it increases survival. However, costs (including disability and increased resource use) are high. Lorenz, Paneth, Jetton, et al., *Pediatrics* 108(6):1269-1274, 2001 (AHRQ grant HS08385).

- *Reducing emergency room (ER) errors in treating febrile infants may require system changes.*

A research team found that 7 percent of infants arriving at the ER with a high fever were treated inappropriately. They either were given antibiotics they did not need or did not receive antibiotics they actually did need. Glauber, Goldmann, Homer, et al., *Pediatrics*

105(6):1330-1332, 2000 (NRSA grant T32 HS00063).

- *Caregivers should pay more attention to palliative care.*

A review of medical records of children who died of cancer showed that parents were more likely than physicians to report that their child had fatigue, poor appetite, constipation, and diarrhea and that these symptoms were not recognized by the medical team. Also, suffering from pain was nearly three times more likely in children whose parents reported that the physician was not actively involved in end-of-life care. Wolfe, Grier, Klar, et al., *N Engl J Med* 342:326-333, 2000 (NRSA training grant T32 HS00063).

- *Providers often do not address major injury-prevention issues during well-child visits.*

A survey of 465 pediatricians, family physicians, and pediatric nurse practitioners found that attitudes about certain childhood injuries, rather than knowledge about the prevalence of particular injuries, affected which topics the clinicians discussed with their patients. Barkin, Fink, and Gelberg, *Arch Pediatr Adolesc Med* 153:1226-1231, 1999 (NRSA training grant T32 HS00046).

- *Clinicians often do not counsel parents on drowning prevention.*

Despite the high incidence of drowning injuries in Los Angeles County, only one-third of a random sample of primary care providers counseled parents about drowning prevention. Two-thirds of the primary care providers surveyed did not know that deaths of young children due to drowning are more common than deaths due to poisoning and firearm injury. Barkin and Gelberg, *Pediatrics* 104(5):1217-1219, 1999 (NRSA training grant T32 HS00046).

Quality Determinants

- *Severity model uncovers source of errors at admission.*

Using a nationally applicable model to control for severity of illness in the emergency department (ED), investigators examined 11,664 hospital records to determine the factors associated with quality of pediatric care. Total errors were strongly associated with residents; there was no association with other care factors. *Pediatric Emergency Care: Severity and Quality* (NTIS Accession No. PB2003-101524),** Murray M. Pollack, Principal Investigator (AHRQ grant HS10238).

- *Pastoral care providers explain spiritual care needs.*

Pastoral care providers from 115 hospitals in 42 States responded to a survey about their perceptions of the spiritual care needs of hospitalized children and their parents, barriers to better care, and the quality of spiritual care in children's hospitals. Most agreed that empathetic listening, praying with children and families, touch and silent communication, and religious rituals or rites were very effective. Respondents estimated that their hospitals provide 60 percent of the ideal spiritual care. Feudtner, Haney, and Dimmers, *Pediatrics* 111(1):e67, 2003 online at www.pediatrics.org (AHRQ grant HS0002).

- *Parents prefer an on-call pediatrician to a nurse advice service.*

After-hours medical advice calls from parents or guardians of about 6,000 children seen at the pediatrics practice of an urban university medical center were randomized to a nurse advice service (566 callers) or the on-call pediatrician (616 callers). Parents rated call satisfaction as very good or excellent significantly more often for the on-call pediatrician, were more likely to comply with advice given for an office visit within 72 hours, and made repeat calls for advice less frequently than those in the nurse

advice group. Lee, Guzy, Johnson, et al., *Pediatrics* 110(5):865-872, 2002 (AHRQ grant HS10604).

- *Characteristics of hospital deaths suggest need for onsite palliative care.*

Investigators used discharge data from 60 hospitals to identify all deaths of patients younger than 24 during 1991, 1994, and 1997. Patients who had chronic conditions were more likely than those who did not to have been mechanically ventilated and to have been ventilated longer. These findings suggest that palliative care services for chronically ill children need to be at least partially hospital-based. Feudtner, Christakis, Zimmerman, et al., *Pediatrics* 109(5):887-893, 2002 (AHRQ grant HS00002).

- *Nutritional intake of extremely premature infants varies by site.*

Researchers examined the weight growth velocity of 564 extremely premature infants at six neonatal intensive care units (NICUs) and found weight growth velocities varied significantly. Control for calories (especially protein intake) accounted for much of this variability. Olsen, Richardson, Schmid, et al., *Pediatrics* 110(6):1125-1132, 2002 (AHRQ grant HS07015).

- *Regionalization decreases the number of deaths from pediatric cardiac surgery.*

This study evaluated discharge data from California hospitals that performed 10 or more pediatric cardiac surgeries, and simulated regionalization of surgery by redistributing patients from low-volume hospitals to high-volume hospitals. Results show that regionalization of pediatric cardiac surgery did not reduce surgical deaths until patients were sent to the nearest high-volume hospitals. Chang and Klitzner, *Pediatrics* 109(2):173-181, 2002 (NRSA training grant T32 HS00028).

- *Type of delivery affects bleeding problems in newborns.*

This prospective study examined the incidence of neonatal thrombocytopenia (NT) and intraventricular hemorrhage (IVH) and delivery method of 1,283 low birthweight infants admitted to six NICUs. Although there is debate over which delivery method is safer (vaginal or cesarean), this study shows that vaginal delivery substantially increased the risk of IVH and severe NT during an infant's first day in the NICU. Kahn, Richardson, Billett, *Am J Obstet Gynecol* 186:109-116, 2002 (AHRQ grant HS07015).

- *Birth in a regional NICU offers LBW infants best chance of survival.*

This study linked birth certificates of 16,732 low birthweight infants with hospital discharge abstracts and death certificates. According to the researchers, birth in a regional NICU offered the best chance to survive. Further, the level of care available at the hospital of birth was more important for survival than the level of care ultimately received. Cifuentes, Bronstein, Phibbs, et al., *Pediatrics* 109(5):745-751, 2002 (AHRQ contract 290-92-0055).

- *Children in Medicaid managed care receive care equal to that of privately insured children.*

Researchers used administrative data and a telephone survey to obtain data on access to, satisfaction with, and use of services for enrollees of Kaiser Permanente of Northern California. They found that Medicaid-enrolled children received care at least equal to that of their commercially enrolled peers. Newacheck, Lieu, Kalkbrenner, et al., *Ambul Pediatr* 1(1):28-35, 2001 (AHRQ Publication No. 01-R039)* (Intramural).

- *High-volume PICUs have better outcomes than low-volume units.*

A study of patient volume and its relationship to risk of death and length of stay in 16 PICUs revealed that higher patient volume is

consistent with lower mortality rates and shorter stays. Tilford, Simpson, Green, et al., *Pediatrics* 106:289-294, 2000 (AHRQ grant HS09055).

- *Parents stress the importance of parent-doctor and child-doctor communication.*

The CAHPS® Child Core Survey was used to assess the interpersonal care of children based on parental responses. The most important factors—according to 3,083 assessments of overall care and of personal doctors—are parent-doctor communication, child-doctor communication, and sufficient time spent with the child. Homer, Fowler, Gallagher, et al., *Jt Comm J Qual Improv* 25(7):369-377, 1999*** (AHRQ grant HS09205).

- *Monthly recertification of Medicaid eligibility may undermine health care quality.*

Twelve months of continuous Medicaid enrollment and an assigned primary care physician (PCP) improved the care of children with middle ear infections, say researchers. Children who are continuously enrolled are far less likely to visit the ER for middle ear infections, more apt to receive antibiotics for the condition, and more likely to be referred for ear surgery than those who are discontinuously enrolled (due to monthly recertification) and lack a PCP. Berman, Bondy, Lezotte, et al., *Pediatrics* 104(5):1192-1197, 1999 (AHRQ grant HS07816).

- *A number of variables affect assessments of managed care for children.*

A review of the research found that access to, satisfaction with, and quality of managed care depend on a range of variables. Future research should focus on specific features of managed care, managed care providers, and poor and chronically ill children. Simpson and Fraser, *Med Care Res Rev* 56(Suppl. 2):13-36, 1999 (AHRQ Publication No. 99-R062)* (Intramural).





Addressing Racial and Ethnic Disparities

- *Ethnic disparities in prescribing of asthma medication exist in private practice.*

Researchers analyzed information from patient-reported questionnaires and prescription, demographic, provider, and other data on a community sample of 1,000 asthmatic children and their families. The analysis of private practices revealed significantly lower inhaled steroid use among Hispanic children. Also, most of the children had not used inhaled steroids in the past year: 73, 88, and 94 percent of whites, blacks, and Hispanics, respectively. Ortega, Gergen, Paltiel, et al., *Pediatrics* 109(1):e1, 2002 online at www.pediatrics.org (AHRQ Publication No. 02-R046)* (Intramural).

- *Increasing use of preventive medications may reduce disparities in asthma burden.*

Researchers analyzed data on Medicaid-insured children with asthma in five managed care organizations and interviewed parents to gauge asthma status and evaluate racial/ethnic variations in the processes of asthma care. Despite having worse asthma than white children, black and Hispanic children were 31 and 42 percent less likely to be using inhaled antiinflammatory medication. Lieu, Lozano, Finkelstein, et al., *Pediatrics* 109(5):857-865, 2002 (AHRQ grant HS09935).

- *Reviewers uncover insights to medical cultural competency.*

Based on a literature review of studies on culture and language in the emergency care of children, researchers recommend use of cultural code cards to help emergency room clinicians quickly identify and treat pediatric problems in ways that are acceptable to parents. Flores, Rabke-Verani, Pine, et al., *Pediatr Emerg Care* 18(4):271-284, 2002 (AHRQ grant HS11305).

- *Experts identify research priorities in Latino child health.*

The Latino Consortium of the American Academy of Pediatrics Center for Child Health Research published a series of recommendations to improve and eliminate barriers to the health care of Latino children. Priority recommendations include that Latino children be better represented in medical research, that study data be analyzed by Latino subgroups, and that studies focus on identifying the social and economic determinants of Latino child health and use of health services. Flores, Fuentes-Afflick, Barbot, et al., *JAMA* 288(1):82-90, 2002 (AHRQ grant K02 HS11305).

- *Barriers to dental care for minority children are revealed.*

Researchers examined comments from a diverse group of 77 caregivers who participated in 11 focus groups to discuss problems in obtaining dental care for their Medicaid-insured children. Caregivers described language barriers; frustrating and time-consuming searches for dentists who would accept Medicaid patients; problems caused by appointment restrictions; and navigating formidable barriers (such as long waiting times and judgmental, disrespectful, and discriminatory behavior from staff and providers). Mofidi, Rozier, and King, *Am J Public Health* 92(1):53-58, 2002 (NRSA training grant T32 HS00032).

- *Investigators find disparities in pediatric dental care.*

An analysis of the 1996 MEPS data revealed substantial disparities in the level of dental services obtained by poor and minority youth. For every type of dental service, use was higher among white children than black and Hispanic children and between non-poor and poor children. State Medicaid health insurance programs fail to assure comprehensive dental services for eligible children. Macek, Edelstein,

and Manski, *Pediatr Dent* 23(5):383-389, 2001 (AHRQ Publication No. 02-R045)* (Intramural).

- † *Commentary summarizes AHRQ's efforts to address inequities in health care.*

In partnership with other agencies and foundations, AHRQ is funding nine Excellence Centers to Eliminate Ethnic/Racial Disparities; supporting six Translating Research into Practice II studies; and developing other programs (i.e., practice-based research networks and the Minority Research Infrastructure Support Program) to augment research to improve the health of underserved and vulnerable populations. Stryer, Clancy, and Simpson, *Health Promotion Practice* 3(2):125-129, 2002 (AHRQ Publication No. 02-R061)* (Intramural).

Tools for Quality Improvement

Evidence-based Practice Centers

Under this program, 13 five-year contracts have been awarded by AHRQ to institutions in the United States and Canada to serve as Evidence-based Practice Centers (EPCs). The EPCs review all relevant scientific literature on assigned clinical care topics and produce evidence reports and technology assessments, conduct research on methodologies and the effectiveness of their implementation, and participate in technical assistance activities. Public and private sector organizations may use the reports and assessments as the basis for their own clinical guidelines and other QI activities. Recently published EPC reports and summaries relevant to children are available from AHRQ. They include:

- *Rehabilitation for Traumatic Brain Injury in Children and Adolescents* (AHRQ Publication No. 99-E025, summary; 00-E001, report)
- *Diagnosis and Treatment of Uncomplicated Acute Sinusitis in*

Children (AHRQ Publication No. 01-E007, summary; 01-E005, report)

- *Treatment of Attention Deficit/Hyperactivity Disorder* (AHRQ Publication No. 99-E017 summary; 00-E005, report)
- *Management of Acute Otitis Media* (AHRQ Publication No. 00-E008, summary; 01-E010, report)
- *Management of Acne* (AHRQ Publication No. 01-E018, summary; 01-E019, report)
- *Telemedicine for Pediatric, Obstetric, and Clinician-Indirect Home Interventions* (AHRQ Publication No. 01-E059, summary; 01-E060, report)
- *Diagnosis and Management of Dental Caries* (AHRQ Publication No. 01-E055, summary; 01-E056, report)
- *Management of Chronic Asthma* (AHRQ Publication No. 01-E043, summary; 01-E044, report)
- *Diagnosis, Natural History, and Late Effects of Otitis Media with Effusion* (AHRQ Publication No. 02-E025, summary; 03-E023, report)
- *Management of Neonatal Hyperbilirubinemia* (AHRQ Publication No. 03-E005, summary; 03-E011, report)
- *Management of Bronchiolitis in Infants and Children* (AHRQ Publication No. 03-E009, summary; 03-E014, report)
- *Criteria for Determining Disability in Infants and Children: Low Birth Weight* (AHRQ Publication No. 03-E008, summary; 03-E010, report)
- *Criteria for Determining Disability in Infants and Children: Failure to Thrive* (AHRQ Publication No. 03-E019, summary 03-E020, report)
- *Criteria for Determining Disability in Infants and Children: Short Stature* (AHRQ Publication No. 03-E025, summary; 03-E026, report)

Child Health Toolbox

The AHRQ-developed Web-based Child Health Toolbox provides concepts, tips, and tools for evaluating quality of health care in Medicaid, SCHIP, Title V, and other health care service programs for children. The toolbox is designed to be especially useful to busy State policymakers and others concerned about quality of care. For more information, see www.ahrq.gov/chtoolbox/.

Consumer Assessment of Health Plans Study CAHPS®

CAHPS® comprises a family of surveys that measure patients' experiences of health care, a critical dimension of quality. CAHPS® was developed by a consortium of researchers from Harvard, RAND, and the Research Triangle Institute, led by AHRQ staff. In 2002, the National Committee on Quality Assurance, the Nation's major accreditor of managed care plans, introduced a revised, expanded CAHPS® for children into its HEDIS measurement set. The new CAHPS® for children allows plans and consumers to assess quality for children with chronic illnesses and disabilities separately from quality of care for other children. Visit www.cahps-sun.org or call 1-800-492-9261 for the survey, help with survey implementation and reporting of results, and for information on the National CAHPS® Benchmarking Database.

Kids' Inpatient Database

AHRQ has released its year 2000 Kids' Inpatient Database (KID), which enables researchers, policymakers, and others to identify, track, and analyze national trends in children's health care (use, access, charges, quality, and outcomes). The 2000 KID contains data from approximately 1.9 million hospital discharges of children 20 years of age and younger in 27 States. KID is part of HCUP, a Federal-State-industry partnership, which includes data

organizations and participating States. For more information go to www.ahrq.gov/data/hcup/hcupkid.htm.

AHRQ Quality Indicators

The AHRQ Quality Indicators (QIs) are measures of health care quality that make use of readily available hospital inpatient administrative data. Software and a user guide are now available to help users apply the QIs to their own data. AHRQ recently released a subset of the AHRQ QIs, the Prevention QIs, which includes three indicators specific to children and others that can be analyzed with children's hospital discharge data. For more information, visit www.ahrq.gov/data/hcup/prevqi.htm.

Put Prevention Into Practice

Put Prevention Into Practice (PPIP) is the vehicle for implementing recommendations of the U.S. Preventive Services Task Force. Both activities are managed by AHRQ. For more information, visit www.ahrq.gov/clinic/prevenix.htm.

20 Tips to Help Prevent Medical Errors

This fact sheet provides specific, research-based recommendations on preventing errors related to medicines, hospital stays, and surgery. Other general recommendations are included. Copies are available from

AHRQ* (AHRQ Publication No. 00-P038). A Spanish language fact sheet is also available from AHRQ* (AHRQ Publication No. 00-P039).

User Liaison Program (ULP) Workshops With Senior State Officials

The ULP disseminates health services research findings in easily understandable and usable formats through interactive workshops and technical assistance for State and local health policymakers and other health services users. Summaries of workshops are available on AHRQ's Web site at www.ahrq.gov/news/ulpix.htm

For More Information

AHRQ's Web site at www.ahrq.gov provides information on the Agency's children's health services agenda, and detailed information on funding opportunities.

Further details on AHRQ's programs and priorities in child health services research are available from:

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